

## Patent Claims

1. Nucleic acid coding for a delta-12-desaturase enzyme,  
characterized by the fact that  
5 it originates from the coldness-adapted marine diatom *fragilariopsis cylindrus*  
and that it is structured according to SEQ ID No. 1 or as a functional variant  
or as a segment with at least 8 nucleotides thereof.
2. The nucleic acid sequence of claim 1,  
10 characterized by the fact that  
the nucleic acid sequence is structured as DNA or RNA, preferably as a  
double-strand DNA.
3. The nucleic acid sequence of claim 1 or 2,  
15 characterized by the fact that  
the nucleic acid is contained in a vector, preferably in an expression vector.
4. The use of the nucleic acid sequence of claim 3 for expression or  
overexpression of the delta-12-desaturase enzyme in host organisms.  
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5. Polypeptide associated with the nucleic acid sequence of claim 1 or 2  
which is structured with an amino acid sequence according to SEQ ID No. 1  
or as a functional variant or as a section with at least 6 amino acids thereof.
- 25 6. The use of the polypeptide of claim 5 lapped to a protein for enriching  
fatty acids dependent upon the delta-12-desaturase in host organisms.
7. The use of polypeptides of claim 6 as additive to human food or in  
medicines.  
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